

## PATENT ABSTRACTS OF JAPAN

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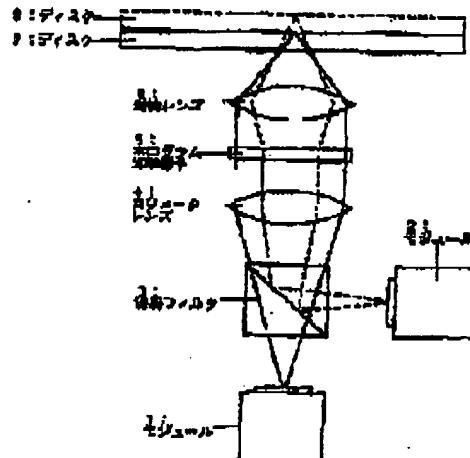
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### (54) OPTICAL HEAD DEVICE

#### (57) Abstract:

PROBLEM TO BE SOLVED: To perform a recording and a reproducing with a high S/N with respect to two kinds of thicknesses of disks even without making the output of a semiconductor laser excessively large.

SOLUTION: A semiconductor laser having the wavelength of 635nm and a light receiving element are incorporated in a module 1 and a semiconductor laser having the wavelength of 785nm and a light receiving element are incorporated in a module 2. The exit light from the module 1 is transmitted through a wavelength filter 3 to be made to be parallel beams in a collimator lens 4 and are transmitted through a hologram optical element 5 to be condensed on a disk 7 by an objective lens 6. The reflected light traces a reverse optical path to be detected by the light receiving element in the module 1. The exit light from the module 2 is reflected by the wavelength filter 3 to be made to be parallel beams in the collimator lens 4 and a minus 1-st order diffracted light by a hologram optical element 5 is made incident on the objective lens 6 as a divergent light to be condensed on a disk 8. The reflected light traces a reverse optical path to be detected by the light receiving element in the module 2.



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